What is claimed:

1. An iterative method for blind deconvolution in a communications receiver for estimating one of users' symbol sequences ($u_j[n]$, j = 1, 2, ..., K), the method at each iteration comprising the steps of

updating the equalizer coefficients $\mathbf{v}_I$ at the Ith iteration using the following equation:

$$\mathbf{v}_I = \frac{\alpha \cdot \tilde{\boldsymbol{R}}^{-1}\tilde{\boldsymbol{d}}_{I-1}}{\sqrt{\tilde{\boldsymbol{d}}_{I-1}^H \tilde{\boldsymbol{R}}^{-1}\tilde{\boldsymbol{d}}_{I-1}}};$$

determining the associated equalizer output $e_I[n]$;

comparing $J_{p,q}(\mathbf{v}_I)$ with $J_{p,q}(\mathbf{v}_{I-1})$ and if $J_{p,q}(\mathbf{v}_I) > J_{p,q}(\mathbf{v}_{I-1})$ going to the next iteration, otherwise updating $\mathbf{v}_I$ through a gradient type optimization algorithm so that $J_{p,q}(\mathbf{v}_I) > J_{p,q}(\mathbf{v}_{I-1})$ and then obtaining the associated $e_I[n]$.

2. The method of claim 1, which further comprises a threshold decision to detect a user's symbol sequence associated with the obtained symbol sequence estimate [$\hat{u}_l[n] = e_I[n]$ (where l is unknown)] as the method converges.

3. The method of claim 1, which further utilizes a multistage successive cancellation (MSC) procedure, at each stage comprising the steps of:

obtaining a symbol sequence estimate $\hat{u}_l[n] = e_I[n]$ (where l is unknown);

determining the associated channel estimate of the obtained symbol sequence; estimate $\hat{u}_l[n]$ (where l is unknown) using the following equation:

$$\hat{\mathbf{h}}_l[k] = \frac{E[\mathbf{x}[n+k]\hat{u}_l^*[n]]}{E[|\hat{u}_l[n]|^2]}; \quad \text{and}$$

updating $\mathbf{x}[n]$ by $\mathbf{x}[n] - \hat{\mathrm{h}}_l[n] * \hat{u}_l[n]$.

4. The method of claim 3, which further comprises a threshold decision to detect a user's symbol sequence associated with $\hat{u}_l[n]$ at each stage of the MSC procedure.

5. A method for blind deconvolution in a communications receiver for estimating one of users' symbol sequences ($u_j[n]$, j = 1, 2, ..., K), the method comprising the steps of:

updating the equalizer coefficients;

determining if the value of the Inverse Filter Criteria (IFC) in the current iteration is larger than that obtained in the immediately previous iteration and if so proceeding to the next iteration, otherwise updating the equalizer coefficients such that the value of the IFC increases; and

determining the optimum equalizer, and an output of the driving inputs to the MIMO system.

6. The method of claim 5, wherein the values of the equalizer coefficients are obtained utilizing the following formula.

$$\mathbf{v}_I = \frac{\alpha \cdot \widetilde{\boldsymbol{R}}^{-1} \widetilde{\boldsymbol{d}}_{I-1}}{\sqrt{\widetilde{\boldsymbol{d}}_{I-1}^H \widetilde{\boldsymbol{R}}^{-1} \widetilde{\boldsymbol{d}}_{I-1}}}$$

7. The method of claim 5, which further comprises a threshold decision to detect a user's symbol sequence associated with the obtained symbol sequence estimate [$\hat{u}_l[n]$= $e_I[n]$ (where l is unknown)] as the method converges.

8. The method of claim 5, which further utilizes a multistage successive cancellation (MSC) procedure, at each stage comprising the steps of:

obtaining a symbol sequence estimate $\hat{u}_l[n]$= $e_I[n]$ (where l is unknown);

determining the associated channel estimate of the obtained symbol sequence;

estimate $\hat{u}_l[n]$ (where l is unknown) using the following equation

$$\hat{\mathbf{h}}_l[k] = \frac{E[\mathbf{x}[n+k]\hat{u}_l^*[n]]}{E[|\hat{u}_l[n]|^2]}; \quad \text{and}$$

updating $\mathbf{x}[n]$ by $\mathbf{x}[n] - \hat{\mathrm{h}}_l[n] * \hat{u}_l[n]$.

9. The method of claim 5, which further comprises a threshold decision to detect a user's symbol sequence associated with $\hat{u}_l[n]$ at each stage of the MSC procedure.